

Listing of the Claims

The following listing of claims will replace all prior versions and listings of the claims in the application:

1. (currently amended) A method for determining an endpoint for a main etch of a first layer, comprising:

~~estimating selecting~~ a main etch process endpoint; ~~and during the main etch,~~
applying a main etch process including:

directing radiant energy at two or more wavelengths ~~directly~~ onto the first layer ~~to be etched;~~

detecting a first intensity maximum followed by a next detectable
second intensity maximum, the first intensity maximum being:

reflected from the first layer at a first wavelength; and

a last detected maximum of intensity of the first wavelength to
occur prior to the ~~selected~~ estimated main etch endpoint; and ~~detecting~~

~~an~~

the second intensity maximum being:

reflected from the first layer at a second wavelength ~~first~~
~~occurring after the last intensity maximum at the first wavelength wherein the~~
~~intensity maximum reflected at the second wavelength occurs before~~
~~breakthrough to an underlying material; and~~

detected before all of the first layer is removed and without
etching into an underlying layer; and
ending the main etch process.

2. (currently amended) The method of claim 1, wherein the first wavelength is longer than the second wavelength.
3. (currently amended) The method of claim 1, wherein at least two interference maxima occur at the first wavelength during the main etch.
4. (currently amended) The method of claim 1, wherein the first layer includes ~~comprises~~ a material that is at least partially transparent to both the first wavelength and the second wavelength.
5. (currently amended) The method of claim 1, wherein the first layer comprises a polysilicon material.
6. (currently amended) The method of claim 1, wherein the main etch endpoint is when the second intensity maximum is detected ~~taken as being at the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.~~
7. (currently amended) The method of claim 1, wherein the main etch endpoint is taken as being at a point an interval later than the second intensity maximum is detected ~~intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.~~
8. (currently amended) A method for determining an endpoint for a main etch of a first layer having an initial thickness, comprising: ~~steps of, during~~
applying the main etch process including;

directing radiant energy at three or more wavelengths ~~directly~~ onto the first layer to be etched;

selecting a first wavelength, a second wavelength, and a third wavelengths;

selecting an etch rate from a time interval between a first detected intensity minimum and an adjacent intensity maximum reflected at the third wavelength, and ~~selecting~~ estimating a main etch endpoint based on the initial thickness of the first layer and the selected etch rate; and

detecting a ~~last~~ first intensity maximum followed by a next detectable second intensity maximum, the first intensity maximum being:

reflected from the first layer at the first wavelength; and

a last detected maximum of intensity of the first wavelength to occur prior to the selected estimated main etch endpoint; and
the second detecting an intensity maximum being:

reflected from the first layer at the second wavelength ~~first occurring after the last intensity maximum at the first wavelength wherein the intensity maximum reflected at the second wavelength occurs before breakthrough to an underlying material; and~~

detected before all of the first layer is removed and without etching into an underlying layer.

9. (currently amended) The method of claim 8, wherein the first wavelength is longer than the second wavelength.

10. (currently amended) The method of claim 8, wherein at least two interference maxima occur at the first wavelength during the main etch.

11. (currently amended) The method of claim 8, wherein the first layer ~~comprises~~ includes a material that is at least partially transparent to both the first wavelength and the second wavelength.

12. (currently amended) The method of claim 8, wherein the first layer ~~comprises~~ includes a polysilicon material.

13. (currently amended) The method of claim 8, wherein the main etch endpoint is when the second intensity maximum is detected ~~taken as being at the intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.~~

14. (currently amended) The method of claim 8, wherein the main etch endpoint is taken as being at a point an interval later than the second intensity maximum is detected ~~intensity maximum reflected at the second wavelength first occurring after the first intensity maximum at the first wavelength.~~

15. (currently amended) The method of claim 8, wherein third wavelength is shorter than the first wavelength and longer than the second wavelength.